Message

From: Stoker, Michael B. [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=DCB64B4E7EDF48AABE8EF43996A4652E-STOKER, MIC]
Sent: 12/23/2019 9:39:57 PM
To: Stuart Coleman [scoleman@surfrider.org]
Subject: RE: BWTF Kauai Results 09142019

Stuart,

I hope all is well. I will be in Hawaii in January and look forward to hopefully meeting with you. I think Hudson Slay will be reaching out to attempt to schedule a meeting. For whatever reason I can not find in my sent file the email I sent you responding to your inquiry below and my disagreement with Bruce's comments in his Op-Ed. Can you please forward it to me. And most importantly Merry Christmas and Happy Holidays to you and yours.

Best regards,
Michael Stoker
Regional Administrator, Region 9, US-EPA
Ex. 6 Personal Privacy (PP)

From: Stuart Coleman <scoleman@surfrider.org>
Sent: Monday, September 23, 2019 2:47 PM
To: Stoker, Michael B. <stoker.michael@epa.gov>
Subject: Fwd: BWTF Kauai Results 09142019

Dear Mike,

It was good talking to you last week, and we appreciate your following up about the water quality issues in Hawaii. We share your concerns about the recent comments from the Hawaii Dept. of Health (DOH) about the EPA-funded Phylo-Chip study in Mahaulepu, Kauai. I'll post the link to Bruce Anderson's Op-Ed below, and we would love to get your response about some of his statements. DOH"s own Phylo-Chip study documents fecal contamination in the samples, yet he goes on to say that there is not evidence of this and throws out the precautionary principle in keeping people safe.

I will also include correspondence from John Alderete, a micro0biologist with PhD who oversees Surfrider's Blue Water Task Force. As you can see below, John responds to each of Bruce Anderson's comments (many of which are exactly the same as the Op-Ed) and says that the detection levels at Mahaulepu on Kauai are still some of the highest in the state. We would like to see if the EPA could review the Phylo-Chip report and oversee the next study being done there.

Beyond our particular concerns about this flawed study, we are also concerned about the water quality testing methods of DOH's Clean Water Branch and their lack of any monitoring during Brown Water Advisories (BWA's). We have almost no data about the true water quality of the state's waters because they refuse to test during BWA's. Thanks for your help with these issues, and our hope is that we can work with the EPA, the DOH and the CWB to improve their water quality monitoring program and protect the health and safety of our coastal waters.

Aloha, Stuart

PS Here is link to Opinion by Anderson https://www.staradvertiser.com/2019/08/07/editorial/island-voices/column-ocean-water-quality-monitoring-improves/
And below is the correspondence between John Alderete and Sen. Mike Gabbard, who chairs the State Senate's Agriculture and Environment Committee:

---------- Forwarded message ---------
From: **John Alderete** <john@foliumbiomed.com>
Date: Fri, Sep 20, 2019 at 12:08 PM
Subject: Re: BWTF Kauai Results 09142019
To: Sen. Mike Gabbard <sengabbard@capitol.hawaii.gov>, Stuart Coleman <scoleman@surfrider.org>

Aloha Senator:

Thank you for your patience with my reply. My business trip to California was more hectic than anticipated.

I know that there is a more comprehensive letter coming your way early next week from Stuart formally addressing the items that we discussed in your office; I will not address those concerns here. But I did want to respond to Dr. Anderson's comments.

My comments are in RED.

Before I start, I just wanted to point out to you that between myself and Dr. Berg (the senior scientist also present at our m meeting) we have nearly three quarters of a century of science between us. We are not simply "citizen scientists"; we are actual practicing scientists with decades of experience.

> *"Thank you for sharing the most recent data from John Alderete. We are aware that Surfrider routinely samples some of the Kauai streams and show relatively high indicator bacteria counts. The high counts may seem alarming, but they are not surprising for most of the streams and canals in Hawaii."*
>
> Relatively high is not accurate. Extremely high is more appropriate. Dr. Anderson is correct that our extremely high counts are not surprising for most of the streams/canals in Hawaii, but not for the reasons he wants you to believe.
>
> *"We currently use enterococci as the fecal indicator bacteria because enterococci are found in the human gut and are shed into human feces:"*
>
> And why does the HDOH use enterococci as the fecal indicator bacteria for water sampling? Simple: it is the standard set forth by the US EPA. I point you to the State of Washington's Department of Ecology website: https://ecology.wa.gov/Water-Shorelines/Water-quality/Saltwater/BEACH-program/Swimming-standard-and-water-quality. The State of Washington, Oregon, California, etc. etc. etc. all use this method to monitor their waterways and beaches because it is the standard.
>
> I had a discussion with my colleagues at the Department of Ecology over there in Washington; I'd like to draw your attention to the water quality criteria that are important to them for determining swimmer safety:
>
> - The geometric mean should not exceed 30 enterococci/100 ml
> - The statistical threshold value should not exceed 110 enterococci/100 ml
>
> Compare these numbers to our sampled numbers in the last report you received. Now, it is true that every municipality has to determine what their own thresholds are (35 geomean and 130 statistical threshold value for us), but we are talking about samples with numbers in the thousands, even tens of thousands.

"The indicator bacteria are not directly pathogenic. Fecal indicator bacteria, however, are associated with human pathogens that may make susceptible individuals ill after exposure to waters with high fecal bacteria. Therefore, high levels of indicator bacteria usually mean higher potential for exposure to human pathogens."

Fecal indicating bacteria are themselves opportunistic pathogens, not just associated. If you are young, old, infirm or otherwise immune suppressed, or just unlucky, enterococci can cause just as severe disease as "directly pathogenic" organisms. The more organisms in the water, the higher the chance of an adverse event. In fact, over the past three decades, enterococci themselves have become the third-most common hospital-acquired human pathogen with mortality up 23%.

"The use of enterococci as a fecal indicator, although recommended by EPA, has many limitations..."

The limitations are irrelevant; a survey of published literature across the world clearly demonstrates the correlation with enterococcus levels in water and human health. This cannot be ignored or swept away.

"First, enterococci are found in many warm-blooded animals, not just humans. Many studies have shown that pathogen risk from non-human sources compared to human sewage sources could be much lower..."

The first part is true. The second part is not a statement I would make as a representative of a department of health. "Could" is subjective and undefined, and we absolutely know that enterococci from other warm-blooded species cause disease. Again, if you put more of these bacteria in the water, the higher the likelihood of an adverse event.

"Also, in Hawaii and many tropical condition environments, enterococci are naturally found and often grow in the soils.

The environmental presence of enterococci is absolutely influenced by humans; the studies to which he is referring are decades old. If the extremely high levels of enterococcus in the Mahaulepu watershed are so "typical", we would expect to see the same levels across our island (and all Hawaiian Islands). It is interesting to me that this watershed's enterococcus issues correlate with known waste dumping.

"Because of these complications in the use of the enterococci indicator, DOH has recently embarked on site-specific studies to better determine risk to swimmers in some of our waters. In Kauai, we looked at the Mahaulepu watershed due to the consistently high counts observed in the Waiopili Stream near Gillin's Beach, which is mentioned in John's email story. We used the DNA-based PhyloChip microarray, a microbial source tracking tool, to determine the source of the high enterococci bacteria."

Senator, I will not go to much into this. We have addressed this with you already and both Carl and I have weighed on this study, scientifically. Simply, keep in mind that their own study showed human contribution to their data. As well, they didn't test for pathogens, so can't make any statements that the water was pathogen-free. The PhyloChip platform is a technology that has no place in our water testing program and simply cannot replace the current testing methodology in terms of cost, deployment, and utility.

"EPA notes that the source of contamination is an important factor for determining human health risk for recreational waters, and health risk from human versus non-human fecal sources can vary. For the Mahaulepu watershed, we found no human or animal source."

Their study confirmed no such thing.

"This suggests that despite the high counts of enterococci, the water poses very low risk levels for human illness."

Given that their study did not demonstrate a lack of human fecal contamination AND that they did not test for pathogens, this statement simply is untrue.

"To better determine the potential risk levels, DOH will be conducting further studies (QMRA or Quantitative Microbial Risk Assessment) to evaluate potential health risks from exposures to non-human enterococci contamination. With these additional studies, DOH is hoping to find better alternative indicators and to find better risk associations for our tropical waters."

I would hope that this study is designed and implemented to the rigorous scientific standards we would expect from a goverment agency tasked with protecting the public health and the environment. The PhyloChip study did not meet this criteria.

As for signage, DOH has posted permanent signs at some of the routinely monitored coastal beach sites (e.g., Niumalu Beach Park) where there are consistent exceedances of the enterococci standards. We hope to confirm using the PhyloChip and perhaps other DNA-based methods whether high enterococci levels are associated with human or animal sources of pollution or are the result of the flushing of these naturally occurring bacteria from soils after heavy rains and therefore little to no risk of sewage contamination. Our decision to post more signs or remove signs will be based largely on the results of these studies."

My colleagues in Washington State don't care what the source of enterococcus growth might be. The correlation between the presence of high levels of entero and human disease are clear. I would expected a DOH to err on the side of caution.

"Again, mahalo for sharing your concerns about water quality associated with steams on Kauai. Interpreting the results of water quality monitoring using somewhat outdated EPA methods, particularly in Hawaii and other tropical areas where these bacteria multiply naturally in soil, is challenging. We'd be glad to meet to discuss the issues, anytime."

I think this should be all of our concern, particlaurly the DOH. I am less interested in Hawaii being a test-bed for novel technologies that may or may not work (I was unaware that their budget allows for EPA to take a direct interest in validating technologies trying to commercialize) and more interested and looking at the data we have right now to better understand how to keep our people safe. As much as Dr. Anderson might hate to acknowledge, my "story" is being repeated all over this island: local people are unknowingly using polluted waterways.

It is an absolute dereliction of duty for our DOH to make excuses for the poor quailty of our waterways and their public use.

Senator, thank you again for your patience with my delayed response. I hope you have a nice weekend.

Mahalo,

jpa

John P Alderete, PhD, MBA
Founder and President

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Ex. 6 Personal Privacy (PP)

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From: Sen. Mike Gabbard <sengabbard@capitol.hawaii.gov>
Sent: Tuesday, September 17, 2019 11:03 PM
To: John Alderete <john@foliumbiomed.com>; Stuart Coleman Ex. 6 Personal Privacy (PP)
Subject: Re: BWTF Kauai Results 09142019

Aloha e John and Stuart,

This is what we got back from Dr. Anderson today. I sent him John's water quality test results yesterday and asked him to consider putting up signage.

Thank you for sharing the most recent data from John Alderete. We are aware that Surfrider routinely samples some of the Kauai streams and show relatively high indicator bacteria counts. The high counts may seem alarming, but they are not surprising for most of the streams and canals in Hawaii.

We currently use enterococci as the fecal indicator bacteria because enterococci are found in the human gut and are shed into human feces. The indicator bacteria are not directly pathogenic. Fecal indicator bacteria, however, are associated with human pathogens that may make susceptible individuals ill after exposure to waters with high fecal bacteria. Therefore, high levels of indicator bacteria usually mean higher potential for exposure to human pathogens.

The use of enterococci as a fecal indicator, although recommended by EPA, has many limitations. First, enterococci are found in many warm-blooded animals, not just humans. Many studies have shown that pathogen risk from non-human sources compared to human sewage sources could be much lower. Also, in Hawaii and many tropical condition environments, enterococci are naturally found and often grow in the soils.

Because of these complications in the use of the enterococci indicator, DOH has recently embarked on site-specific studies to better determine risk to swimmers in some of our waters. In Kauai, we looked at the Mahaulepu watershed due to the consistently high counts observed in the Waiopili Stream near Gillin's Beach, which is mentioned in John's email story. We used the DNA-based PhyloChip microarray, a microbial source tracking tool, to determine the source of the high enterococci bacteria. EPA notes that the source of contamination is an important factor for determining human health risk for recreational waters, and health risk from human versus non-human fecal sources can vary. For the Mahaulepu watershed, we found no human or animal source. This suggests that despite the high counts of enterococci, the water poses very low risk levels for human illness. To better determine the potential risk levels, DOH will be conducting further studies (QMRA or Quantitative Microbial Risk Assessment) to evaluate potential health risks from exposures to non-human enterococci contamination. With these additional studies, DOH is hoping to find better alternative indicators and to find better risk associations for our tropical waters.

Below are links to a press release and op-ed explaining DOH's interest in continuing further recreational water studies.

As for signage, DOH has posted permanent signs at some of the routinely monitored coastal beach sites (e.g., Niumalu Beach Park) where there are consistent exceedances of the enterococci standards. We hope to confirm using the PhyloChip and perhaps other DNA-based methods whether high enterococci levels are associated with human or animal sources of pollution or are the result of the flushing of these naturally occurring bacteria from soils after heavy rains and therefore little to no risk of sewage contamination. Our decision to post more signs or remove signs will be based largely on the results of these studies.

Again, mahalo for sharing your concerns about water quality associated with steams on Kauai. Interpreting the results of water quality monitoring using somewhat outdated EPA methods, particularly in Hawaii and other tropical areas where these bacteria multiply naturally in soil, is challenging. We'd be glad to meet to discuss the issues, anytime.

Me ka ha`aha`a,

Mike

Senator Mike Gabbard
Chair, Agriculture and Environment Committee

Hawai'i State Capitol, Room 201
Honolulu, Hawai'i 96813
Ph: 586-6830
P.S. Click HERE to check out my Senate webpage
"Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals, and happiness." Thomas Jefferson

From: John Alderete <john@foliumbiomed.com>
Sent: Monday, September 16, 2019 9:53 AM
To: Sen. Mike Gabbard <sengabbard@capitol.hawaii.gov>
Subject: Re: BWTF Kauai Results 09142019

Senator,

Please feel free to share my email in its entirety as you see fit. Mahalo nui loa for your continued diligence for the people of Hawaii.

jpa

From: "Sen. Mike Gabbard" <sengabbard@capitol.hawaii.gov>
Date: Monday, September 16, 2019 at 9:44 AM
To: John Alderete <john@foliumbiomed.com>
Subject: RE: BWTF Kauai Results 09142019

Aloha e John,

Mahalo for sending over these water quality testing results and for sharing this powerful and disturbing story. I'm working with Surfrider on a letter I'll be sending to the Department of Health on this serious public health/environmental matter.

Would you be comfortable with me sharing your email with DOH?

Me ka ha`aha`a,

Senator Mike Gabbard
Chair, Agriculture and Environment Committee

Hawai'i State Capitol, Room 201
Honolulu, Hawai'i 96813
Ph: 586-6830 Fax: 586-6679
P.S. Click HERE to check out my Senate webpage

"Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals, and happiness."
Thomas Jefferson

From: John Alderete <john@foliumbiomed.com>
Sent: Sunday, September 15, 2019 4:58 PM
To: Sen. Mike Gabbard <sengabbard@capitol.hawaii.gov>
Subject: BWTF Kauai Results 09142019

Aloha, Senator Gabbard:

I hope this message finds you well and your office well.

This past weekend was our monthly sampling weekend here on Kauai.

Please see the attached data for September's results.

SUMMARY

Nineteen (19) of our 29 tested sites (66%) this month tested above the Statistical Threshold Value (STV) of 130 counts/100 mls, while 10 of the sites (34%) were tested below the STV.

Of these 19 sites, 15 of them were streams or river mouths, representing ALL of the streams/rivers tested this month. This is most likely due to the heavy rain we had the night before testing, as elevated STV numbers were seen across the island (see details below).

Sites with STV increases

Compared to the same sites tested last month, 52% of the tested sites showed a significant change (>50%) in levels of *Enterococcus* in the water; all of these sites were well above the STV of 130. Because the % increase for some of these calculations were so ridiculously high (one at over 14,000%!), I chose to represent the change between last month also as a fold increase to help wrap our brains around it (for example, if a reading from last month was 34 orgs/100 mls and this month was 3,345 orgs/100 mls, this represents a 98-fold increase, or 3,345/34=98). As you can see, some of these increases are quite dramatic.

Sites with Significant Increase in Counts				
Location	**August 2019 counts**	**September 2019 counts**	**% Increase**	**Fold-Increase**

			vs. August	vs. August
Wailua River Mouth	313.0	591.0 *	88.8%	1.89
Moloa'a Stream	1,850.0	5,172.0	179.6%	2.80
Kilauea Stream Mouth	1,119.0	3,873.0	246.1%	3.46
Niumalu Beach Park	373.0	1,374.0	268.4%	3.68
Lumahai Stream	85.0	359.0	322.4%	4.22
Waiopili Stream	880.0	4,611.0	424.0%	5.24
Moikeha Canal	985.0	5,475.0	455.8%	5.56
Anahola Stream	369.0	2,247.0	508.9%	6.09
Hanalei River	199.0	3,076.0	1445.7%	15.46
Hanamaulu Stream	185.0	3,255.0	1659.5%	17.59
Kalihiwai Stream	193.0	3,654.0	1793.3%	18.93
Nawiliwili Stream	10.0	820.0	8100.0%	82.00
Rock Quarry Surf	10.0	1,112.0	11020.0%	111.20
Kalihiwai Surf	20.0	2,987.0	14835.0%	149.35
Hanapepe River	2.3	345.0	14900.0%	150.00

* All sites tested above STV

Sites with STV decreases

24% of the samples (n=7) tested this weekend trended downwards in the *Enterococcus* counts compared to last month. All of these samples showed a significant (>50%) increase:

Sites with Significant Decrease in Counts			
Location	**August 2019 counts**	**September 2019 counts**	**% Decrease vs August**
Waia'kea Canal	985.0	703.0	-29%
McArthur Ditch	4,611.0	2,481.0	-46%
Gillins Beach	880	546.0	-38%
Waikomo Stream	712.0	262.0	-63%
Wailua Beach Park	583.0	74.0	-87%
Kalapaki Bay Surf	717.0	41.0	-94%
Waimea River Mouth	379.0	2.3	-99%
Major's Bay	1,723.0	2.3	-100%

Four of these sites went from above the STV to below (Wailua, Kalapaki, Waimea Major's Bay), which I find slightly surprising giving the rain. Waimea River mouth is particularly interesting as this site rarely falls below the STV.

Like last month, most of the beaches/surf areas tested were below the STV. 6 sites (21% showed no change from last month, including Pinetrees, Middles, Waikoko, the Bowl, Uhelekawawa, and Salt Pond Surf.

Most of the beaches/surf areas tested were below the STV, ALL of our rivers and streams were well above the STV.

As always, thank you for your attention.

Mahalo,

jpa

P.S. Senator, I wanted to share a personal story with you. I had an experience related to this water testing that has not set well with me now for several weeks.

My wife and I took a weekday off a few weeks ago and decided to head down towards Poi'pu; we hiked into Kamala point (SE side of Kauai) to see the spectacular views. Driving out, we decided to make a brief detour at Gillins Beach, which is one of the areas affected by the Mahaulepu watershed about which we came and talked with you.

The stream that feeds into the Gillins Beach area (Mahaulepu Stream) is consistently one of the highest polluted streams on our island; this month I just observed 4,611 fecal-indicating bacterial per 100 mls of sample. *This is 35 times higher than the EPA limit for human safety of 130 orgs/100mls.* I have never hiked down the path to the beach, so we decided to do so on this particular day.

What I saw at the beach nearly brought me to tears. Directly in the path of the stream out to the beach, where the bacterial counts are the highest, were several families, playing, wading, swimming in this polluted water. Half a dozen children were in the water. I simply could not help myself and my wife and I spent an hour or so talking to people about the stream, its pollution, and its potential health implications.

One of the mothers was nearly brought to tears as she had been wading out in the water with her one-year-old. I asked them why they were there, and to a one, they all indicated that guidebooks had told them this area had some of the most pristine beach areas. They simply had no idea what dangers were looking in the seemingly tranquil waters.

This is a very simple matter, in my opinion. At the very least signage would help people make informed decisions, yet, our requests to put signs up has been met with resistance by the DOH as well as the landowner. Even worse, when signs have been put up in the, they are taken down by the landowner (Grove Farms). If our own DOH would appropriately test the stream and stream mouth area (I am skeptical this can happen) and put signage, a lot of potential issues could be averted. This is a travesty.

Senator, this is a time bomb waiting to go off. Somebody is going to get seriously ill or die from exposure to these contaminated waters and they will look for somebody to blame.

--
Stuart H. Coleman | Hawaiian Islands Manager | Surfrider Foundation
808-381-6220 | scoleman@surfrider.org